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Re-visit N/Z Ratio of Free Nucleons from Collisions of Neutron-Rich Nuclei as a Probe of EoS of Asymmetric Nuclear Matter

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Abstract: The N/Z ratio of free nucleons from collisions of neutron-rich nuclei as a function of their momentum is studied by means of isospin-dependent Quantum Molecular Dynamics. We find that this ratio is not only sensitive to the form of the density dependence of the symmetry potential energy but also its strength determined by the symmetry energy coefficient. The uncertainties about the symmetry energy coefficient influence the accuracy of probing the density dependence of the symmetry energy by means of the N/Z ratio of free nucleons of neutron-rich nuclei.

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